ABSTRACT OF THE DISCLOSURE

A process for hydrotreating gas oil comprises: a first gas oil desulfurization step carried out in a first catalytic zone comprising a desulfurization catalyst; at least partial elimination of the hydrogen sulfide formed at the end of the first gas oil desulfurization step; one or more additional desulfurization steps carried out in one or more catalytic zones comprising a desulfurization catalyst. The distribution of the catalyst in the different zones can be selected so as to maximize the catalytic activity, and thus minimize the volume of catalyst required for a unit of a given capacity operating at fixed operating temperature and pressure, so as to obtain an intensely desulfurized gas oil.

PATENT

INSTITUT FRANÇAIS DU PÉTROLE

PROCESS AND APPARATUS EMPLOYING A PLURALITY OF CATALYTIC BEDS IN SERIES FOR THE PRODUCTION OF LOW SULPHUR GAS OIL

Inventors: Thierry CHAPUS and Frédéric MOREL

ABSTRACT

A process for hydrotreating gas oil comprises:

- A first gas oil desulphurisation step carried out in a first catalytic zone comprising a desulphurisation catalyst;
- at least partial elimination of the hydrogen sulphide formed at the end of the first step;
- one or more desulphurisation steps carried out in one or more catalytic zones comprising a desulphurisation catalyst. Desulphurisation in this reactor is more effective because of the much lower H_2S partial pressure; the distribution of the catalyst in the different zones is selected so as to maximise the catalytic activity, and thus minimise the volume of catalyst required for a unit of a given capacity operating at fixed operating temperature and pressure, so as to obtain an intensely desulphurised gas oil.